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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,417	01/12/2001	Hwa Young Yun	630-1220P	8541

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EXAMINER

SHELEHEDA, JAMES R

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/758,417

Applicant(s)

YUN, HWA YOUNG

Examiner

James Sheleheda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-42 is/are allowed.
- 6) ☒ Claim(s) 18,19,22,24,26 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 21,23,25,27,28 and 33 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Specification

1. The amendment filed 1/17/02 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Page 13, lines 10-13 define a “**diagnostic request object**” in the diagnostic resource on the resource layer which performs diagnosing of a system and transfers its result to the head end. No such object to perform diagnosing is previously contained in the disclosure as originally filed. Page 13, lines 10-11 and 17-19 define a “**diagnostic confirmation object**” which transfers a “**diagnosis result performed by the OOB protocol processor 61 to the head end**”. The performance of a diagnosis by the OOB protocol processor is not previously contained in the disclosure as originally filed.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

2. Claim 29 is objected to because of the following informalities: The claim refers to the conditional access unit receiving a “decoded” signal. Page 14, Line 14 of the specification states that the conditional access unit actually receives a “demodulated” signal. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 22, 29 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The current invention is a system that calls for the diagnosing of an operation state of a set-top box, wherein the diagnosing is performed by the main circuit of the set-top and by a cable headend (see page 19, lines 23-24, and page 20, lines 1-11).

The disclosure as originally filed fails to adequately describe a set-top box wherein the diagnosing of a system is performed by a "diagnostic request object", as newly recited in claim 22, lines 1 and 2.

As to claim 29, the current invention calls for a CPU controlling a POD with a diagnostic resource on a resource layer of the POD interface protocol, wherein the CPU controls the transmitting of diagnosis information performed by the set-top main circuit (see page 19, lines 1-24 and page 20, lines 1-24).

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The disclosure as originally filed fails to adequately describe a POD comprising a CPU, controlling the conditional access unit, which performs the diagnosing of specific information or an operation state of the set-top box, as newly recited in claim 29, lines 9-12. These limitations are new matter and they should be canceled from the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (Brooks)(5,973,684), in view of applicant's conceded prior art, and further in view of Laubach et al. (Laubach)(6,081,533).

As to claim 18, Brooks discloses a **main circuit unit** (DET 100) **receiving** a broadcast signal transmitted from a head end or a broadcasting station (column 5, lines 24-34), **decoding** the broadcast signal (column 5, lines 54-62) and **outputting** the decoded broadcast signal (column 5, lines 54-59) and a **CPU** (microprocessor 110) controlling the main circuit unit, **interfacing** with the head end (column 12, lines 48-50 and lines 64-67, and column 13, lines 1-18), and **diagnosing** specific information or an operation state of the main circuit unit (column 12, lines 9-35).

Although Brooks discloses communicating to the headend (via NIM, 101) and diagnostic resources (column 12, lines 32-36), he fails to disclose a POD interfacing with the headend and a diagnostic resource on a resource layer of the POD interface protocol.

Applicant conceded that the prior art discloses a set-top, which includes a POD (Figure 2) interfacing with a headend (see specification at page 5, lines 17-24 and page 6, lines 1-19), for the advantage of allowing set-top users to switch between services and providers without the need to replace the set-top box (see specification at page 4, lines 14-24 and page 5, lines 1-12).

Laubach discloses a diagnostics resource on a resource layer of an interface card (column 15, lines 1-34) for the advantage of cheaply diagnosing faults in a set-top box (column 15, lines 35-46).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Brook's system to include the use of a POD interfacing with a headend, as taught by applicant's conceded prior art, for the advantage of allowing set-top users to switch between services and providers without the need to replace the set-top box.

Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the system of Brooks and applicant's conceded prior art to include a diagnostic resource on a resource layer of any interface device (such as a POD), as taught by Laubach, for the advantage of cheaply diagnosing faults in a set-top box.

As to claim 19, applicant conceded that the prior art discloses wherein a communication module of a PCMCIA card type is connected to the POD interface port (see specification at page 6, lines 20-21).

7. Claims 20, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks, Applicant's conceded prior art and Laubach as applied to claim 18 above, and further in view of Applicant's conceded prior art.

As to claim 20, although Brooks, applicant's conceded prior art and Laubach disclose the diagnosing of a state of the main circuit unit, they fail to disclose wherein a headend performs the diagnosing.

Applicant conceded that the prior art discloses wherein a headend performs the diagnosing of an operating state of a set top box (see specification at page 4, lines 3-13) for the typical advantage of quickly alerting a cable operator of any problems within a set top box.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to further modify Brooks, Applicants conceded prior art, and Laubach's system to include wherein a headend performs the diagnosing of an operating state of a set top box, as further taught by applicant's conceded prior art, for the typical advantage quickly alerting a cable operator of any problems within a set top box.

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As to claim 24, Brooks, Applicant's conceded prior art and Laubach disclose a diagnostic resource on a resource layer (see Laubach at column 15, lines 1-34), however, he fails to specifically disclose any other resources on the resource layer as claimed.

Applicant conceded that the prior art discloses an open cable set-top box wherein the resource layer contains a resource manager resource, an MMI resource, an application information resource, a low speed communication resource, a conditional access support resource, a copy protection resource, a generic IPPV support resource and a specific application support resource (see specification at page 8, table 1) for the typical advantage of manufacturing a set top which conforms to the current U.S. open cable standard.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to further modify Brooks, Applicants conceded prior art, and Laubach's system to include a resource layer comprising a resource manager resource, an MMI resource, an application information resource, a low speed communication resource, a conditional access support resource, a copy protection resource, a generic IPPV support resource and a specific application support resource, as further taught by applicant's conceded prior art, for the typical advantage of manufacturing a set top which conforms to the current U.S. open cable standard.

As to claim 26, Brooks, applicant's conceded prior art and Laubach disclose a main circuit unit (see Brooks, DET 100), they fail to disclose a main circuit unit comprising all of the stated claim limitations.

Applicant conceded that the prior art discloses a main circuit unit comprising a tuner tuning the received broadcast signal, a demodulator demodulating the broadcast signal tuned by the tuner, a demultiplexor selecting either the signal demodulated by the demodulator or a signal inputted from an interface, and outputting the selected signal, a decoder decoding a data stream outputted from the demultiplexor, an OOB receiver receiving broadcast information from the tuner and an OOB transmitter transmitting data inputted from the interface to the tuner (see specification at page 5, lines 17-24 and page 6, lines 1-9) for the advantage of manufacturing a set-top that conforms to the open cable standard for interfacing with a POD (see specification at page 5, lines 1-16).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Brooks, Applicants conceded prior art, and Laubach's system to include a main circuit unit comprising a **tuner** tuning the received broadcast signal, a **demodulator** demodulating the broadcast signal tuned by the tuner, a **demultiplexor** selecting either the signal demodulated by the demodulator or a signal inputted from an interface, and outputting the selected signal, a **decoder** decoding a data stream outputted from the demultiplexor, an **OOB receiver** receiving broadcast information from the tuner and an **OOB transmitter** transmitting data inputted from the interface to the tuner, as further taught by applicant's conceded prior art, for the

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advantage of manufacturing a set-top that conforms to the open cable standard for interfacing with a POD.

8. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's conceded prior art, in view of Laubach.

As to claim 29, applicant conceded that the prior art discloses a POD module of an open cable system comprising a **conditional access unit** receiving a demodulated signal and descrambling the received signal according to a conditional access key (see specification at page 6, lines 11-14), an **OOB protocol processing unit** transmitting or receiving data related to a broadcast program (see specification at page 6, line 16), a **demultiplexor** selecting a signal inputted/outputted to/from the OOB protocol processing unit and the decoded signal (see specification at page 6, lines 18-19), and a **CPU** controlling the conditional access unit (see specification at page 6, lines 10-11), performing a POD interfacing with a set-top box through a communication protocol (see specification at page 7, lines 5-16) and having various resources on a resource layer of the POD interface protocol (see specification at page 8, lines 3-8 and table 1). Applicant's conceded prior art fails to disclose the diagnosing of specific information or an operation state of the set-top box by having a diagnostic resource on the resource layer of the POD interface protocol.

Laubach discloses a diagnostics resource on a resource layer of an interface card (column 15, lines 1-34) for the advantage of cheaply diagnosing faults in an open cable set-top box (column 15, lines 35-46).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify applicant's conceded prior art to include a diagnostic resource on a resource layer of any interface device (such as a POD), as taught by Laubach, for the advantage of cheaply diagnosing faults in an open cable set-top box.

As to claim 30, applicant's conceded prior art and Laubach disclose wherein the resource layer contains a resource manager resource, an MMI resource, an application information resource, a low speed communication resource, a conditional access support resource, a copy protection resource, a generic IPPV support resource, a specific application support resource (see specification at page 8, table 1), and a diagnostic resource (see Laubach at column 15, lines 1-34).

As to claim 31, applicant conceded that the prior art discloses an open cable system comprising a **set-top box** decoding a broadcast signal receiving from a head end and outputting a decoded broadcast signal (see specification at page 5, lines 17-24 and page 6, lines 1-9), a **point of deployment (POD) module** having a conditional access unit descrambling the broadcast signal received from the head end and performing a bi-directional communication with the set-top box and the head end (see specification at page 6, lines 10-19 and page 7, lines 1-16), a **POD interface** (see specification at page 5, lines 13-16) having a POD interface protocol so as to perform an interfacing between the set-top box and the POD module (see page 7, lines 17-24 and page 8, lines 1-6), and a **headend diagnosing** an operation state of the set top box

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(see specification at page 4, lines 3-13). Applicant's conceded prior art fails to disclose a diagnostic resource at a resource layer of the POD interface protocol.

Laubach discloses a diagnostics resource on a resource layer of an interface card (column 15, lines 1-34) for the advantage of cheaply diagnosing faults in an open cable set-top box (column 15, lines 35-46).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify applicant's conceded prior art to include a diagnostic resource on a resource layer of any interface device (such as a POD), as taught by Laubach, for the advantage of cheaply diagnosing faults in an open cable set-top box.

As to claim 32, applicant's conceded prior art discloses wherein the set top box and the POD module are separable (see specification at page 4, lines 21-23 and page 5, lines 1-12).

Allowable Subject Matter

9. Claims 21, 23, 25, 27, 28 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Claims 34-40 are allowable because the prior art fails to teach or disclose a method of performing a diagnostic function in a set top box, which performs POD interfacing with the head end through a POD interface protocol and diagnoses an operation state of the main circuit unit using a diagnostic resource on the POD interface protocol, by receiving a status request from the head end, communicating with the head end using diagnostic support objects, wherein the head end requests information from the set top using diagnostic request objects, and the head end receives information from the set top using diagnostic confirmation objects.

Claims 41 and 42 are allowable because the prior art fails to teach or disclose a method of performing a diagnostic function in an open set-top box by performing POD interfacing with the head end, diagnosing specific information of the set top main circuit unit through a POD interface protocol diagnostic resource, the POD requesting information from the main circuit unit and transmitting said information to the head end, the head end detecting an error and requesting detailed sub-system information of the set top, and the POD requesting detailed sub-system error information from the main circuit and transmitting said detailed information to the head end.

Conclusion

11. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually

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Certificate of Mailing

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Signature: _____

Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sheleheda whose telephone number is (703) 305-8722. The examiner can normally be reached on 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the primary examiner, Chris Grant can be reached on (703) 305-4755. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-HELP.

James Sheleheda
Patent Examiner
Art Unit 2614

JS


CHRIS GRANT
PRIMARY EXAMINER